

lander, if he were to remain in the forests during the months of June, July, and August, would run the risk of losing the greater part of his herd, either by actual sickness, or from the deer fleeing of their own accord to mountainous situations to escape the gad-fly. From these causes the Laplander is driven from the forests to the mountains that overhang the Nor ay and Lapland coasts, the elevated situations of which, and the cool breezes from the ocean, are unfavourable to the existence of these troublesome insects, which, though found on the coast, are in far less considerable numbers there, and do not quit the valleys; so that the deer, by ascending the highlands, can avoid them."

Early in September the herds and their owners leave the coast, in order to reach their winter quarters before the fall of the snows. With the approach of winter, the coat of the rein-deer begins to thicken, and like that of most other polar quadrupeds to assume a lighter colour. It is, however, when the winter is fairly set in that the peculiar value of the rein-deer is felt by the Laplanders. Without him, communication would be almost utterly suspended. Harnessed to a sledge, the rein-deer will draw about 300 lbs.; but the Laplanders generally limit the burthen to 240 lbs. The trot of the rein-deer is about ten miles an hour; and the animal's power of endurance is such, that journeys of one hundred and fifty miles in nineteen hours are not uncommon. There is a portrait of a rein-deer in the palace of Drottningholm (Sweden), which is represented, upon an occasion of emergency, to have drawn an officer with important despatches the incredible distance of eight hundred English miles in forty-eight hours. This event is stated to have happened in 1699, and the tradition adds, that the deer dropped down lifeless upon his arrival.

During the winter, the food of the rein-deer is the lichen or moss, which they display wonderful quickness of smell in discovering beneath the snow. In the summer they pasture upon all green herbage, and browse upon the shrubs which they find in their march. They also, it is now well ascertained, eat with avidity the lemming or mountain rat, affording one of the few instances of a ruminating animal being in the slightest degree carnivorous.

Of course, in a country where their services are so indispensable, rein-deer constitute the principal wealth of the inhabitants. M. De Broke says,—“The number of deer belonging to a herd is from three hundred to five hundred; with these a Laplander can do well, and live in tolerable comfort. He can make in summer a sufficient quantity of cheese for the year's consumption; and, during the winter season, can afford to kill deer enough to supply him and his family pretty constantly with venison. With two hundred deer, a man, if his family be but small, can manage to get on. If he have but one hundred, his subsistence is very precarious, and he cannot rely entirely upon them for support. Should he have but fifty, he is no longer independent, or able to keep a separate establishment, but generally joins his small herd with that of some richer Laplander, being then considered more in the light of a menial, undertaking the laborious office of attending upon and watching the herd, bringing them home to be milked, and other similar offices, in return for the subsistence afforded him.”

Von Buch, a celebrated traveller, has well described the evening milking-time, of which a representation is given in the wood cut:—“It is a new and a pleasing spectacle, to see in the evening the herd assembled round the gamme (encampment) to be milked. On all the hills around, every thing is in an instant full of life and motion. The busy dogs are every where barking, and bringing the mass nearer and nearer, and the rein-deer bound and run, stand still, and bound again, in an indescribable variety of movements. When the feeding animal, frightened by the dog, raises his head, and displays aloft his large and proud antlers, what a

beautiful and majestic sight! And when he courses over the ground, how fleet and light are his speed and carriage! We never hear the foot on the earth, and nothing but the incessant crackling of his knee-joints, as if produced by a repetition of electric shocks—a singular noise; and from the number of rein-deer, by whom it is at once produced, it is heard at a great distance. When all the herd, consisting of three or four hundred, at last reach the gamme, they stand still, or repose themselves, or frisk about in confidence, play with their antlers against each other, or in groups surround a patch of moss browsing. When the maidens run about with their milk-vessels from deer to deer, the brother or servant throws a bark halter round the antlers of the animal which they point out to him, and draws it towards them; the animal generally struggles, and is unwilling to follow the halter, and the maiden laughs at and enjoys the labour it occasions, and sometimes wantonly allows it to get loose that it may again be caught for her; while the father and mother are heard scolding them for their frolicsome behaviour, which has often the effect of scaring the whole flock. Who, viewing this scene, would not think on Laban, on Leah, Rachel, and Jacob? When the herd at last stretches itself, to the number of so many hundreds at once, round about the gamme, we imagine we are beholding an entire encampment, and the commanding mind which presides over the whole, stationed in the middle.”

The wild rein-deer are hunted by the Laplanders, and also by the Eskimaux, and the Indians of North America.

ON THE HISTORY OF SMALL-POX.

Of the numerous diseases to which mankind are exposed, the class denominated epidemic or spreading diseases is attended with the most alarming interest. A malady of this sort may take its origin in the remotest district of an extensive country, and yet, if its progress be independent of the peculiarities of soil and climate, it may soon come to overrun the whole. In the same way, although a spreading malady commence in one hemisphere of the globe, it may after a time invade the other, and its ravages know ultimately no bounds, save those of human intercourse and human existence.

Those spreading diseases, from the great havoc they often commit, have been commonly known by the name of “plagues” and “pestilences.” The word *plague* is apt to convey to an unprofessional person a very indefinite idea of some great calamity which he is unable to describe; but in reality it is neither more nor less than a *fever*. All plagues, in medical language, are understood to have been fevers; and they are distinguished one from the other by their *types* or peculiar character of their symptoms. Thus, the Egyptian plague is a fever which bears a strong resemblance to ordinary typhus, in producing an extreme depression of the constitutional powers of the patient; and it is distinguished from typhus by being attended with swellings of the glands in different parts of the body. The plague of London, which, in 1665, destroyed within the bills of mortality eight thousand persons in one week, was similar to that of Egypt. Varieties of the same virulent epidemic are probably pointed at in the writings of Thucydides and Galen as having prevailed in the earlier ages at Athens and at Rome. At all events it seems certain that during nearly one half of the sixth century, and at several periods since, large portions of Europe and of Asia were devastated by the Egyptian scourge.

Small-pox is a plague which, previous to the practice of vaccination, exercised a still more destructive power even than the preceding disease; but it does not appear that the physicians of ancient Greece or Rome were at all acquainted with small-pox. For the traces of its early

progress we must look farther east. In the traditions of the people of China and Hindostan small-pox was enumerated as one of their common diseases; and in some of their earliest books, devoted to religion and philosophy, descriptions of it have been found to exist.

China or Hindostan, then, must be considered the cradle of small-pox. We have no means, however, of ascertaining in which of the two it first appeared, or of offering a rational conjecture to explain the manner of its first production, beyond the fact that these countries have from remote ages swarmed with inhabitants, and been subject to dreadful inroads of famine—circumstances of themselves eminently favourable to the generation of pestilence. According to the Chinese and Brahminical authorities, there is written evidence to show that small-pox had been established in their respective countries during a period of three thousand years and upwards.

Although small-pox had prevailed so long in China and Hindostan, the first notice of its appearance in Western Asia cannot be dated earlier than the middle of the sixth century, and Europe was not invaded until a later period. The epoch to which we allude, as the recorded commencement of its western ravages, was the year 569, when the city of Mecca, in Arabia, was besieged by an army of Abyssinian Christians, under the command of Abreha, with the expectation of being able to destroy the Kaaba or Pagan temple contained within that city. In this army the small-pox committed dreadful havoc, and we are also told that measles made its appearance there at the same time.

From the siege of Mecca, A.D. 569, to the siege of Alexandria, in 639, not any of the Arabian records that have come down to us make mention of the progress of small-pox. During this interval, however, the disease was undoubtedly propagated, in various directions, in the wake of the victorious Arabs, who were assembled and led forth to war under the banner of their prophet. War has been ever the ready disseminator of pestilence; and, as Persia and Syria were soon afterwards subdued by the successors of Mohammed, we may fairly conclude that small-pox was imported with the conquerors into these countries, if it had not previously reached them.

On the other hand, Amrou, the lieutenant of the Caliph Omar, invaded Egypt in 638. In two years he captured Alexandria. It is conjectured that small-pox was communicated by the Mohammedan troops to the inhabitants of this city during the siege. Ahron, an author who lived in Alexandria at the time, wrote a treatise on small-pox, to which Rhazes, the distinguished Arabian physician, alludes. Unfortunately, Ahron's work has been since lost.

The rapid and prolonged success which now attended the Saracens by land and sea, opened new channels for the diffusion of small-pox; and, in attempting to follow its progress westward, along the shores of the Mediterranean, we have no more certain guide than the chronological details of Saracenic conquest. Okba Ebn Nafe, the general of Amru, subdued that portion of Africa lying between Barka and Zoweilah, including what now constitutes the piratical state of Tripoli. To him succeeded others who pushed the dominion of the Saracens still further. In 712 their armies made a descent on Spain. After defeating Roderick, the last king of the Goths, they took Toledo, and eventually overrun the whole country. About the year 732 the Saracens crossed the Pyrenees. Consequently with the period of this invasion we may date the introduction of small-pox into that kingdom.

Small-pox probably reached Britain about the beginning of the ninth century; but no distinct notice of this extraordinary visitor is furnished by the writers of the time. Sunk in the ignorance of the middle ages, they allowed the worst scourge that had ever thinned the human race to pass without description; or, if mentioned at all in their meagre chronicles, it is only under

the name of "plague, or of "consuming fire,"—epithets then apparently applied to eruptive pestilences in common.

When small-pox enters a locality where it had not been before, its first effects are almost always more extensively destructive than any subsequent. Happily, in the present day, we can form, from our own experience, no conception of the mortality that in all probability marked its early course in England. A deadly pestilence, to one attack of which, as a general rule, every individual, in every rank of life, the highest as well as the lowest, is liable, must necessarily have filled the country from one extremity to the other with sickness and with death. To aggravate the occurrence of such an evil, no disease is in itself more loathsome than small-pox. The victim of the attack, more particularly in the confluent variety, presents a most pitiable spectacle. In this form the patient is seen labouring under a fever, with the worst typhoid or putrid symptoms. He is at the same time completely covered from head to heel with pustules, which not unfrequently coalesce, and ultimately change the whole surface of his body into one continued sore that renders his features undistinguishable to his dearest friends, and converts him into an object of disgust to their senses. Nor are the immediate sufferings and danger of death the only misfortunes attendant on small-pox. In case the patient linger through the fever, or finally survive the attack, it is often at the sacrifice of every thing considered desirable in personal appearance. Beauty may be transformed into deformity—and, what is of far greater importance, by the loss of sight the patient may be condemned to pass the remainder of his life in total darkness.

Countries which have received small-pox in comparatively modern times, afford striking examples of the magnitude of the calamity in its unmitigated terrors. In 1517 St. Domingo was infected. The island then contained, it is said, a million of Indians; but these unfortunate people were altogether destroyed by small-pox and the murderous arms of their Spanish invaders. About 1520 small-pox commenced in Cuba. From thence it was carried to Mexico. Within a short period, according to computations that have been made, the pestilence destroyed in the kingdom of Mexico alone three millions and a half of the inhabitants. The emperor, brother and successor to Montezuma, was among the victims. At subsequent periods different parts of the American continent suffered much. Whole nations of warlike Indians were almost extirpated; and piles of bones, found under the tufted trees in the interior of the country, have been supposed to bear testimony to the ravages of small-pox.

Peculiarities of climate exercise no mollifying influence over the virulence of small-pox. Iceland was invaded in the year 1707, and it suffered as much as the southern regions. The inroad destroyed sixteen thousand persons—more than a fourth of the estimated population of the island. Greenland escaped until 1733. In that year small-pox appeared, and carried off nearly all its inhabitants.

Small-pox is now familiar to every section of the globe; but we hear of it no longer as a scourge to sweep away the population of an extensive district, with a rapidity and power approaching to those of the tornado. The beneficent Providence which, for the fulfilment of its own mysterious purposes, tolerates the growth and extension of numerous plagues, has placed within the reach of human intelligence numerous remedies capable either of alleviating or of completely obviating their dangerous effects. Without the aid of inoculation and vaccination it is calculated that at least one fourteenth of every generation of mankind would perish beneath the deadly taint of small-pox; but that, were inoculation generally practised, the mortality would not amount to

one in seventy of those on whom the operation had been performed, and, under the protective influence of vaccination, that one death is not to be expected in many hundreds of persons so treated. Inoculation has of late years been wisely abandoned by the medical profession; vaccination is recommended in its stead. The history of the progress of inoculation, and of Dr. Jenner's invaluable discovery, we shall touch upon in a future number.

DANIEL DEFOE.

IN the ensuing week occurs the anniversary of the death of this great writer, whose name is doubtless known to most of our readers as that of the author of *Robinson Crusoe*; but who, although more than a century has now elapsed since he ceased to live, has not yet obtained in the general estimation that share of fame and that rank in English literature to which he is justly entitled. Defoe's was a life of extraordinary activity; an account of which, therefore, if given in detail, might occupy, as indeed it has been made to occupy, volumes. Here we must confine ourselves to a very rapid and general sketch. He was born in 1661, in London, where his father was a butcher, of the parish of St. Giles's, Cripple-gate. The family name was *Foe*, to which he appears to have himself prefixed the *De*. His father, who was a dissenter, sent him to be educated at an academy at Newington Green, kept by a clergyman of his own persuasion. Here he distinguished himself by his fondness for reading every thing that came in his way, and his industry in storing his mind with useful knowledge. On leaving the academy he is supposed to have been bound apprentice to a hosier; and he afterwards set up for himself in that line in Freeman's Yard, Cornhill. It is probable, however, that he had scarcely finished his apprenticeship when he made his first appearance as an author; for in one of his later writings he mentions a political pamphlet which he published in 1683, and in terms which almost seem to imply that even that was not the first production of his pen; he was then, he says, "but a young man, and a younger author."

Literature was destined to become Defoe's chief profession. His speculations in trade, among which was a brick and tile work near Tilbury Fort in Essex, were not fortunate; and about the year 1692 he became bankrupt. His conduct in relation to this event was highly to his honour; for, although he had obtained an acquittal from his creditors on giving up every thing he had, he appears to have persevered to the end of his life in the endeavour to pay off the full amount of his debts, and to have succeeded to a great extent in effecting that object. About a dozen years after his bankruptcy, he states in one of his publications, that "with a numerous family, and no helps but his own industry, he had forced his way with undiscouraged diligence through a sea of misfortunes, and reduced his debts, exclusive of composition, from seventeen thousand to less than five thousand pounds." He had married in 1687.

Although Defoe had come forth so early as a political writer, his next appearance from the press was in a different character. In 1697, he published a work bearing the title of '*An Essay on Projects*.' It is full of new and ingenious schemes, connected not only with trade and commerce, but with education, literature, and the general interests of social improvement. This same year, however, we find him re-entered upon his old field of politics, where he continued to distinguish himself as the most active, the most able, and the most conspicuous, among a crowd of fellow-combatants, throughout a stormy period of about eighteen years. Our space will not permit us to follow him through the various incidents of this part of his history, or even to enumerate the productions of his fertile and un-

wearied pen. Subordinate and comparatively humble as was the sphere in which he moved, and exposed as he was from his circumstances to all sorts of temptations, Defoe's political career was distinguished by a consistency, a disinterestedness, and an independence, which have never been surpassed, and but rarely exemplified to the same degree by those occupying the highest stations in the direction of national affairs. His principles repeatedly drew upon him obloquy, danger, persecution, and punishment, both in the shape of personal and pecuniary suffering, and in that of stigma and degradation; but nothing ever scared him from their courageous avowal and maintenance. The injustice he met with on more than one occasion was not more shocking from its cruelty than from its absurdity.

It was on the 19th of February, 1704, during his imprisonment on a conviction for publishing a satirical pamphlet, entitled '*The Shortest Way with the Dissenters*,' that he commenced his political paper, entitled, first, a '*Review of the Affairs of France*,' and afterwards, (namely from 1st January, 1706,) a '*Review of the State of the English Nation*.' It was originally published only once a week, but at last appeared every Tuesday, Thursday, and Saturday, printed on a half sheet, or four quarto pages. To the political news and disquisitions, was regularly appended a short chronicle of domestic incidents; and the whole was written by Defoe himself. The work was continued till the completion of the ninth volume in May, 1713; when a tax which had recently been imposed, the same which probably occasioned the dropping of the *Spectator*, (see *Penny Magazine*, vol. i. p. 147,) induced the author to bring it to a termination. He was then in Newgate for the second time. Defoe's *Review*, which, at its commencement at least, had very great success, has been usually regarded as the parent, and in some respects the model of the *Spectator*. But it has not enjoyed the good fortune of that celebrated work; for while the *Spectator* has been reprinted many times, a perfect copy of the *Review*, we believe, is not now known to exist. There are only the first six of the nine volumes in the Museum. But many other works proceeded from Defoe's pen while he was engaged with this publication. Among the most remarkable of these was his poem in twelve books, entitled '*Jure Divino*,' an able attack on the notion of the divine right of kings,—and his *History of the Union with Scotland*, an event in the negotiating of which he had a considerable share, having been sent down by government to Edinburgh for that purpose. Defoe appears to have accounted his services on this occasion among the most important he had been able to render to his country; and probably few individuals of that day saw so clearly the advantages of the arrangement which thus converted the two nations into one people.

Conformably to the fate which had pursued him through life, the accession of the house of Hanover, although the end and consummation, it may be said, of all his political labours, instead of bringing him honours and rewards, consigned him only to neglect and poverty. The treatment he met with seems to have affected his health, though it could not break his spirit. In 1715 he was struck with apoplexy, and for some time it was apprehended that he would not recover from the attack. The strength of his constitution, however, which had been sustained by a life of unsullied correctness and temperance, carried him through. But he was now resolved to abandon politics, and to employ his pen for the future on less ungrateful themes. The extraordinary effect of this determination was to enable him, by a series of works which he began to produce after he had reached nearly the age of sixty, to eclipse all that he had formerly done, and to secure to himself a fame which has extended as far and will last as long as the language in which he wrote. *Robinson Crusoe*, the first of his admirable fictions, appeared in 1719. The reception of it, says Mr.

Chalmers, "was immediate and universal; and Taylor, who purchased the manuscript after every bookseller had refused it, is said to have gained a thousand pounds." It has ever since continued, as every reader knows, to be one of the most popular books in the English tongue, the delight alike of all ages, and enchainning the attention by a charm hardly possessed in the same degree by any similar work. Other productions in the same vein, and more or less ably executed, followed in rapid succession from the pen of the industrious and inexhaustible author. Among them are especially to be mentioned his *Journal of the Plague*, a fictitious narrative, published in 1722, which is said to have deceived Dr. Mead, and to have been taken by him for a true history; his *Memoirs of a Cavalier*, which appeared the same year; and his *Life of Colonel Jack*, published the year following. All these narratives, the mere fabrications of the writer's invention, are distinguished by an air of nature and truth, which it is almost impossible during the perusal not to take for genuine. Defoe died in his native parish on the 24th (not as has been often stated the 26th) of April, 1731, and consequently in his 70th or 71st year. He was buried in Bunhill Fields, then called Tindall's Burying-ground. He left several children, the descendants of some of whom still survive. It is lamentable to think that he appears after all his exertions to have died insolvent. The vast amount of his literary labours may in some degree be conceived from the fact, that the list of his publications given by Mr. Wilson, his latest biographer, contains no fewer than 210 articles, and it is believed not to be complete. Many of these works were written in circumstances of great privation and distress. In the preface to his poem of '*Jure Divino*,' occurs the following affecting passage, with which we shall conclude our notice:—"I shall say but very little in the defence of the performance but this: it has been wrote under the heaviest weight of intolerable pressures; the greatest part of it was composed in prison; and as the author has unhappily felt the most violent and constant efforts of his enemies to destroy him ever since that, the little composure he has had must be his short excuse for any thing incorrect. Let any man, under millions of distracting cares, and the constant ill-treatment of the world, consider the power of such circumstances over both invention and expression, he will then allow that I had been to be excused, even in worse errors than are to be found in this book."



[Portrait of Defoe.]

INVENTION OF PAPER.

THERE is no country which has not had its learned and elaborate inquirers as to the means through which Europe became acquainted, sometime about the eleventh century, with the article of paper. Casiri, however, whilst employed in translating Arabic writers, has discovered the real place from which paper came. It has been known in China, where its constituent part is silk, from time immemorial. In the thirtieth year of the Hegira, (in the middle of the seventh century,) a manufactory of similar paper was established at Samarcand; and in 706, fifty-eight years afterwards, one Youzef Amrû, of Mecca, discovered the art of making it with cotton, an article more commonly used in Arabia than silk. This is clearly proved by the following passage from Muhamad Al Gazeli's '*De Arabicarum Antiquitatum Eruditione*':—"In the ninety-eighth year of the Hegira," says he, "a certain Joseph Amrû first of all invented paper in the city of Mecca, and taught the Arabs the use of it." And as an additional proof, that the Arabians, and not the Greeks of the lower empire, as it has long been affirmed, were the inventors of cotton paper, it may be observed that a Greek of great learning, whom Montfaucon mentions as having been employed in forming a catalogue of the old MSS. in the king's library at Paris, in the reign of Henry II., always calls the article '*Damascus Paper*.' The subsequent invention of paper, made from *hemp* or *flax*, has given rise to equal controversy. Maffei and Tiraboschi have claimed the honour in behalf of Italy, and Scaliger and Meermann, for Germany; but none of these writers adduce any instance of its use anterior to the fourteenth century. By far the oldest in France is a letter from Joinville to St. Louis, which was written a short time before the decease of that monarch in 1270. Examples of the use of modern paper in Spain, date from a century before that time; and it may be sufficient to quote, from the numerous instances cited by Don Gregorio Mayans, a treaty of peace concluded between Alfonso II. of Aragon, and Alfonso IX. of Castille, which is preserved in the archives at Barcelona, and bears date in the year 1178; to this we may add, the *fueros* (privileges) granted to Valencia by James the Conqueror, in 1251. The paper in question came from the Arabs, who, on their arrival in Spain, where both silk and cotton were equally rare, made it of hemp and flax. Their first manufactories were established at Xativa, the San Felipe of the present day; a town of high repute in ancient times, as Pliny and Strabo report, for its fabrication of cloth. Edrisi observes, when speaking of Xativa, "Excellent and incomparable paper is likewise made here." Valencia too, the plains of which produce an abundance of flax, possessed manufactories a short time afterwards; and Catalonia was not long in following the example. Indeed the two latter provinces at this moment furnish the best paper in Spain. The use of the article, made from flax, did not reach Castille until the reign of Alfonso X., in the middle of the thirteenth century, and thence it cannot be questioned that it spread to France, and afterwards to Italy, England, and Germany. The Arabic MSS., which are of much older date than the Spanish, were most of them written on satin paper, and embellished with a quantity of ornamental work, painted in such gay and resplendent colours, that the reader might behold his face reflected as if from a mirror.—*Journal of Education*, No. 10.

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